

**Manitoba
Natural Resources**



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**prepared by the
Resource Allocation Working Group**

**PLANNING REPORT
ON NATURAL
RESOURCES**

**LOUISE
PLANNING
DISTRICT**

Technical Report 87-1

PREFACE

Municipal Councils or established Planning District Boards are charged with the responsibility for municipal land use planning and development. This document has been prepared in response to a request from the local municipal planning authority for background material on the subject of natural resources for which the Department is responsible.

This document describes the natural resources in the study area, and identifies Provincial and Departmental concerns and objectives from a land use, development planning perspective. It offers for review, policies and guidelines to remedy, mitigate or anticipate issues and land use problems.

The bases for this report are the Provincial Land Use Policies dealing with natural resources and the policies of Manitoba Natural Resources.

Municipal planning is a consultative process, and the information and policies discussed in this document are offered as advice to the local authority in their land planning deliberations.

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FISHERY RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

Fisheries potentials in the Planning District are limited by shallow waters and intermittent streams that are prone to fish die-offs. The most significant fisheries waters are Goudney (Pilot Mound) Reservoir, the Pembina River and Swan Lake (Map 1).

Goudney Reservoir

This 22 hectare (55 acre) reservoir was constructed by P.F.R.A. in 1964 on the Pilot Creek drain. It has a maximum depth of 5 meters (17 feet) and a volume of 550 decameters (450 acre feet) at a full supply level of 451.8 meters (1482 ft.).

Brook and rainbow trout were stocked in 1966. By 1969, winter dissolved oxygen levels were declining and subsequent stocking, between 1969 and 1975, involved northern pike and perch which are more tolerant of low oxygen levels. Winterkill occurred in 1970, 1974 and 1975. Due to these persistent fish die-offs no fish were stocked between 1976 and 1983. The installation of an aeration system in early 1984 allowed the reintroduction of trout (rainbows and browns), walleye, perch, largemouth bass and black crappie. In 1986, small northern pike were discovered in the reservoir. The source of this stock is unknown.

Most of the small drainage area of 135 square kilometers (52 square miles) is surrounded by tilled cropland and pasture. Cattle are allowed direct access to the reservoir and its tributaries. Reservoir waters are nutrient rich and, before 1984, diminished midsummer and late winter water quality often impacted fish survival and domestic water use. Winterkills were usually severe while summer stagnation could occasionally affect the lower half of reservoir volumes.

In 1984, an aeration system was installed in the reservoir through the joint participation of the Provincial Fisheries Branch, Manitoba Water Services Board, and the Pilot Mound and District Chamber of Commerce. The system has effectively reduced summer stagnation and winterkill problems.

The introduction of northern pike is unfortunate. This species is an effective predator, especially in small waterbodies, and will likely prevent the effective introduction of more desirable sport species.

Pembina River

In high flow years, northern pike, suckers and carp are known to move up the Pembina River and repopulate upstream lakes and the river itself. Most stocks likely originate from the Red River and/or dammed areas along the river. Deeper areas of the Pembina, in Manitoba, reportedly hold up to 3.8 meters (12 feet) of water which, in some years, may be sufficient to overwinter fish. Small scattered springs and some beaver dams may help to maintain a minimal winter flow which can aid fish survival. In low flow years upstream fish movement is negligible.

Winterkill is likely if lack of snow allows deep ice conditions to develop on the river. This can result in ice freezing to the bottom in shallower areas which isolates fish in the deeper holes. Any water flow is forced to the surface, resulting in surface flooding of the ice and a lack of oxygenated water in the deeper fish holding areas. Also, in low flow years, a lack of flow and low water levels will often allow winterkill and summerkill to develop.

Some areas upstream of Swan Lake are deeper than Swan Lake. In some years, fish remaining in the river or escaping to the river from Swan Lake, have a higher probability of survival than those trapped in Swan Lake. Winterkills do occur, however, in the Rock Lake - Swan Lake reach.

Northern pike and bullheads are the major Pembina River sport species. In some years suckers are abundant and dipnetters are active during the spring spawning run.

Swan Lake

Swan Lake is a large 1295 hectare (3200 acre), shallow; 2.1 meter (7 ft.), fertile waterbody with a volume of 11,800 decameters (9,600 acre feet) at an elevation of 398.5 meters (1307 ft.). Water elevations vary widely.

Winterkills are very common and fish repopulation is dependent on upstream or downstream movements. Angling success is dictated by rare overwinter survival, natural reproduction and the number of fish moving through the system. Pike and bullheads dominate the catch.

Fish aggregate near a springfed creek on the north shore when winterkill threatens. Occasionally, Fisheries Branch has recovered pike from this area for transfer to non-winterkill waters. Local anglers also fish and dipnet at this time. The fish are attracted to the area by water movement and higher dissolved oxygen levels.

Other Waters

In 1962, P.F.R.A. constructed a small 5 hectare (12 acre) reservoir at Crystal City. Maximum depth is about 3 meters (10 feet). This reservoir has never been stocked by Fisheries Branch because winterkill conditions develop almost every winter. Minnow species, such as sticklebacks and fatheads, are able to survive as they are very tolerant of very low dissolved oxygen levels.

Pembina River tributaries such as Pilot Creek, Crystal Creek and Long River are too shallow and too intermittent in flow to support permanent fish populations. In high flow years, fish from the Pembina reportedly move a short distance up these tributaries and, as such, can serve as spawning and rearing areas for newly hatched fry.

II. CONCERNS/OBJECTIVES

Waters within the Planning District are shallow, enriched and adjacent to agricultural activities. Intermittent flows, erosion and siltation, nutrient loading and drainage have impacted water quality and fish stocks along the Pembina River and its tributaries. Any factors that adversely influence water

quality or quantity can adversely influence fish populations. Since demand is high and fishing opportunities are few, existing fisheries and upstream watersheds should, wherever practical, be protected from nutrient loading and contamination.

Fish are a renewable resource and it is incumbent upon all governments to ensure the provision of a suitable habitat that will assure continuing fish stocks for the long term benefit of all Manitobans.

Specifically, the fisheries concerns/objectives are:

1. To ensure the survival or improvement of fish stocks, subject to the effects of natural environmental changes and approved man-made environmental changes. Fish habitat associated with Goudney Reservoir, Swan Lake and the Pembina River and its tributaries should be protected.
2. To maintain, enhance and diversify angling opportunities to Manitobans to meet existing and future demands.
3. To promote communication and cooperation between private landowners, industry, the public, local government and Manitoba Natural Resources so as to achieve high standards of conservation practices.

III. POLICIES/GUIDELINES

Although fisheries habitats are being stressed and have been reduced, what remains can be retained and enhanced by judicious use of land and water in the Planning District. In order to achieve the fisheries objectives and to mitigate and alleviate concerns, the following apply:

1. Fisheries habitat, spawning sites and nursery areas should be protected.
 - (a) Ditching and stream rechannelization, whenever practicable, should not be permitted in direct tributaries to the watershed capable of supporting spawning and nursery habitat. The construction of dykes as opposed to channel deepening and straightening shall be encouraged. Measures to limit nutrient and sediment inflow shall be encouraged.
 - (b) Land clearing, cultivation and development to the edge of significant waterways shall be prohibited. Development or maintenance of appropriate vegetative cover along waterways to prevent erosion, siltation and reduce runoff shall be encouraged. Where possible a buffer strip of natural vegetation 91.5 meters (300 feet) wide from the ordinary high water mark shall be maintained along the watershed. As a minimum, buffer strip widths should be 12 m (40 feet) plus 1.5 times slope gradient (%), along each side of the stream.
2. Shorelines subject to intensive use and development should be protected from excessive erosion and organic loading. Activities that discharge pollutants shall be restricted in their location and it may be required that precautionary safeguards that mitigate the pollutant be incorporated into the development activity.

3. The right of public access to fishing waters shall be maintained in accordance with such acts, regulations and contracts that are in place from time to time.

4. Specific fisheries enhancement projects could be considered, e.g.

(a) Crystal City Reservoir

Aeration of this small impoundment would allow sport species stocking and overwintering. A small local fishery could be created.

(b) Swan Lake

A deep channel constructed off the mouth of the north shore creek could provide an improved fish refuge for fish that aggregate at this location. If winterkill is reduced, improved summer angling could be expected. Since Indian Reserve land is involved, agreements would be required with the Swan Lake Band.

(c) Goudney Reservoir

1. Fencing livestock from most of the reservoir perimeter would reduce erosion and nutrient loading. This domestic water supply deserves improved protection.

2. Screens placed on the drop inlet water discharge structure would reduce fish losses from the reservoir. Fish are attracted by water movement and become entrained by spring discharges.

The Manitoba Habitat Heritage Corporation has cost-shared projects similar to those mentioned above.

IV. IMPLEMENTATION

Fisheries objectives and guidelines could be implemented as follows:

1. Through conservation/management advice and assistance offered by staff of Manitoba Natural Resources.
2. By public and private cooperation through management and development agreements.
3. By the Board or Councils through the judicious use of restrictive zoning bylaws, subdivision control procedures and the issuance of development permits.

FORESTRY RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

The Louise Planning District lies within the Aspen Parkland Forest Section, specifically Forest Management Unit 04 as defined in the 1980 Manitoba Forest Inventory Classification System. The forest inventory on the area was completed in 1982. Both Crown land and private land forest inventory information is available and should be of benefit to landowners in the area. Field forest measurements that were required on private lands to complete the forest inventory were only done with permission from the landowners.

For areas in close proximity to population centres, landowners with forested land on their holdings might consider growing trees as a crop, such as fuelwood for example. This is particularly true for land unsuitable for other agricultural purposes but still capable of supporting tree growth.

While trees and forests have value as a renewable cash crop, their presence is valuable in other ways. These include control of precipitation runoff and retarding snow melt to lessen flood risk; erosion control both water and wind; a habitat for wildlife; and recreation opportunities for people. Furthermore, forest harvesting operations can be done in a manner that will enhance all forest values; however, it is essential that fire be kept out, destructive grazing be avoided, and any utilization or disposal of elm trees be in conformance with The Dutch Elm Disease Act and Regulations.

II. CONCERNS/OBJECTIVES

Principal Objective:

To effectively manage and protect forested lands, and to maintain and enhance the overall benefits accruing from the forest resource.

Specific Objectives:

1. To sustain the integrity of the forest land base in Manitoba and to maintain the forest resource in a healthy and productive state.
2. To encourage responsible use and husbandry of the forest resource, to obtain maximum achievable net benefits including employment and recreation opportunities, sound land use practices and soil conservation.
3. To assist in the creation and sustenance of self-supporting industries by providing appropriate tenure and access to a forest resource managed under sustained yield practices.

III. POLICIES/GUIDELINES

The general policy applying to forests on Crown land will be to improve sustained yield and intensive management practices beginning with the more productive and accessible forest sites in the Province as economic conditions and funding support permits.

The general policy applying to forests on private land will be to encourage efficient and effective utilization of these timber resources as cash crops, and as a soil conservation land use technique for controlling erosion, etc.

IV. IMPLEMENTATION

The objectives and policies as outlined shall be addressed and implemented as follows:

1. By the Board and/or Councils through the judicious use of restrictive zoning by-laws, subdivision control procedures and the issuance of development permits which recognize the intent of the concerns and objectives identified.
2. By encouraging good forest management practices on all forested land.
3. By maintaining the integrity of the forest land base.
4. By assistance and advice on conservation practices by staff of Manitoba Natural Resources and by public and private cooperation through management and development agreements.

OUTDOOR RECREATION

I. PRESENT CONDITIONS/INTRODUCTION

There are no Provincial Parks in the Louise Planning District. The nearby parks - Spruce Woods, Rock Lake and Turtle Mountain - provide opportunities for outdoor recreation in close proximity to the Planning District.

The System Plan for Manitoba's Provincial Parks identifies the Pembina River corridor as a potential Provincial Recreational Trailway. Potential exists for a series of trails along the river valley that will provide people with opportunities to experience and appreciate this outstanding part of Manitoba's landscape. Efforts to maintain those portions of the river corridor in the Planning District as an attractive natural and pastoral setting will be required.

The suitability of land for outdoor recreational activities has been estimated by Canada Land Inventory (CLI) (Map 1). This survey found no lands in the District which had "high" or "very high" capability for these pursuits. However, lands in a cluster of sections near La Riviere (sections 24 to 26-03-10W) were seen to have "moderately high capability" for outdoor recreation due to the slopes, specifically downhill skiing and viewing, with associated camping. The sections to the north of this (29 to 36-03-10W and 3 to 5-4-10W) contain lands which have "moderate capability for outdoor recreation", specifically viewing, camping, nature study and outdoor recreation.

Along the south shore of Swan Lake are lands which have a "moderate capability for outdoor recreation", specifically for bathing, boating, camping, and recreational lodging.

The rest of the District is classed as having "moderately low" or "low" capability, for such activities as hiking, nature study, and the like. Some particular sites, such as Nebogwawain Butte, and SE 20-03-11E, have been identified as having an historic or prehistoric site.

Virtually none of the lands having higher than a "low" capability for outdoor recreation are Crown, but those which do fall into the higher classes have already been set aside as Wildlife Management Areas. Therefore, the lands in the District which have a better suitability for outdoor recreation are very limited in area, and are almost entirely in private hands. Especial attention is required on the part of municipal authorities to use the mechanisms at their disposal to preserve and protect such recreational opportunities as the area affords.

II. CONCERNS/OBJECTIVES

The future development of the Planning District should consider the potential for outdoor recreation, maintenance and enhancement of environmental quality, and prevention of land use conflicts with outdoor recreation uses. In this respect, the physical and natural resources of the District are most important and require identification, maintenance and protection. Land of high quality for outdoor recreational purposes is very limited in the District, so that care must be taken to minimize disruption or damage engendered by conflicting uses

or developments on adjoining lands.

Insufficient regulation of such conflicts, and inadequate support for outdoor recreational activities can result in temporary or permanent degradation of the District's recreational resources.

The following are specific objectives:

1. Lands identified (above) as having value for outdoor recreation, that is, the areas near La Riviere and to the north, the shore of Swan Lake, and the two historic-prehistoric sites, should be regulated to insure that the character of the area is retained. Other portions of the Pembina River Valley should similarly be treated by regulation to prevent degradation of their recreational usefulness.
2. Other areas found to be suitable for outdoor recreational activities, not mentioned in (1), should be identified and protected from uses which would endanger or diminish their value for outdoor recreational activities.
3. Lands immediately adjacent to the areas referenced in (1) and (2) should not be considered for intensive development or for other development which would significantly diminish the recreational potential of the higher quality lands.
4. Development in recreation areas should not exceed the carrying capacity of the resource. In particular, recreation areas should be protected from unplanned residential development and other potentially conflicting uses.
5. Major road corridors to recreation areas, and in particular PTH 3 near La Riviere, should be identified and afforded protection from environmental and aesthetic degradation. The right of public access to outdoor recreation opportunities must be ensured.
6. The variety of natural, historic, cultural and recreational features and facilities found in the District should be profiled by means of information and museum displays, interpretive programming, and school outdoor education programs. Sites with interpretive significance (such as historical sites and outstanding examples of geological and other natural processes) should be developed for their educational value, and protected by means of buffers or zoning bylaws from conflicting uses.

III. POLICIES/GUIDELINES

1. All Class 3 and 4 (CLI) recreation areas shall be defined and given proper recognition. Resource and land use policies in these areas shall give the highest priority to outdoor recreation. Similar definition and recognition shall be provided to site-specific Class 5 recreation areas, such as historic/prehistoric sites.
2. Other Class 5 lands, particularly those in the Pembina Valley, are of local and regional significance and should be recognized as providing opportunities for certain outdoor recreation activities such as hiking, hunting, cross-country skiing, and wildlife and landscape viewing. Outdoor recreation should be considered in those of these areas where a trail

system is or will be developed. On other Class 5 lands, while outdoor recreation may not always be considered the use of highest priority, other uses must consider the potential effects on outdoor recreational interests. Some of these lands must be preserved for recreational purposes if benefits to the community are to be maintained or improved.

3. Control will be exercised in the approval of seasonal or permanent rural residential development. It may be desirable to separate such developments from prime recreational areas. Specific areas for future cottage or rural residential development shall be identified and promoted in order to reduce uncontrolled development. Scattered or random residential development would generally be in conflict with outdoor recreation priorities in Class 3 and 4 (CLI) areas. Permanent non-farm or seasonal residences would generally not be allowed in these areas outside of planned and designated sites; existing residences of these types in these areas should be identified as non-conforming uses.
4. Existing areas and routes of public access shall be recognized and maintained or improved.
5. Development policies respecting lands adjacent to and along access roads to La Riviere and Swan Lake shall not permit the quality of the recreational opportunity to be degraded or endangered. Strip development shall not be allowed.
6. The Planning District shall encourage the development and growth of outdoor recreation enterprises and service functions which are compatible with the character of the community and the nature of the recreational area, and which provide a source of employment.
7. Agricultural land use practices and policies applying to areas within or in close proximity to important outdoor recreation areas shall not adversely affect the recreation opportunities. Equivalent limitations shall apply to other land use practices in these areas.

IV. IMPLEMENTATION

The objectives and policies can be achieved by means of appropriate zoning by-laws, conditions of subdivision approval, development permits, and building permits.

Consultation with the staff of Manitoba Natural Resources is encouraged.

WATER RESOURCES: GROUNDWATER

I. PRESENT CONDITIONS/INTRODUCTION

Groundwater is fairly readily available throughout the District. Well yield, however, is low and generally adequate only for farm and domestic requirements. Higher-yield aquifers suitable for municipal or moderate industrial requirements may occur at a few locations.

Groundwater quality in most of the District ranges from fair to saline. Good to excellent groundwater has been reported at a few locations. High sulphate concentration (more than 1000 mg/L) and very high hardness is a common problem. The saline water generally is considerably softer than the high sulphate water and therefore it is more acceptable for domestic supply.

In most of the District, the only aquifers are fractured zones in the shale bedrock that underlies the District (Figure 1). Depth to the fractured shale aquifers ranges from a few meters to more than 60 meters.

Sand and gravel aquifers are fairly common in a small area in the southeast corner of the District and within buried bedrock valleys that occur in the District (Map 2). Depth to the sand and gravel aquifers ranges from a few to more than 70 meters. The deep aquifers occur in the buried bedrock valleys.

In extensive areas the shale bedrock is at or near ground surface. Because in these areas aquifers could be infiltrated by pollutants, they are classified as groundwater pollution hazard areas (Map 3).

II. CONCERNS/OBJECTIVES

The total groundwater supply in the District is adequate for present requirements and some future development. Groundwater is the principal source of water supply for domestic and farm requirements. Therefore, the overall concern is groundwater resource management and protection to assure adequate supply for existing users and for potential development. Some of the aquifers developed for water supply are overlain by sufficiently thick low-permeability deposits to prevent pollution of the aquifers. However, in most of the District the materials that form aquifers are at or near ground surface and are subject to pollution. Consequently these areas are considered to be groundwater pollution hazard areas. Pollution prevention in these areas is the main concern in the District.

OBJECTIVES:

1. To manage the aquifers in a manner that would not deprive existing users of their water supply and would not have a detrimental effect on groundwater potential in the District.
2. To maintain groundwater withdrawal within acceptable limits.
3. To prevent aquifer pollution.

III. POLICIES/GUIDELINES

1. Intensive development and high capacity wells should be permitted only in areas where they will not cause a reduction in water supply for existing users.
2. Groundwater consumption should not exceed the total sustained yield of an aquifer.
3. Wells should be installed in a manner that will not have a detrimental effect on aquifers.
4. Activities that may cause pollution under normal operating conditions or by accident should not be permitted in groundwater pollution hazard areas unless it can be proved by adequate field investigation that the proposed activities will not cause pollution of existing or potential groundwater supply in the area.

IV. IMPLEMENTATION

1. Aquifer management is implemented by Manitoba Natural Resources, Water Resources under the provisions of the Ground Water and Water Well Act and the Water Rights Act.
2. Well construction in respect to prevention of detrimental effect on aquifers is regulated by Manitoba Natural Resources, Water Resources under the provisions of the Ground Water and Water Well Act and the regulations thereto.
3. Aquifer pollution prevention is implemented by Manitoba Environmental and Workplace Safety and Health, Environmental Management.

WATER RESOURCES: SURFACE WATER

I. PRESENT CONDITIONS/INTRODUCTION

The Louise Planning District is situated in the Pembina River Drainage Basin. Surface runoff flows in a northerly direction into the Pembina River which forms the north boundary of the District (Map 4). Flooding is primarily restricted to the Pembina Valley and lands immediately adjacent to other creeks and rivers. Localized drainage problems and potholes may limit development in other areas of the District. Valley embankments and shorelands may be subject to bank stability and erosion problems, especially if improperly developed.

Swan Lake, on the Pembina River, is located partially in the district. Along with Pelican and Rock Lakes, this lake has been the subject of much discussion regarding water quality and water levels. There are presently proposals to raise the lake level to enhance conditions for fish, wildlife and recreation, but at this point no decision has been made to proceed with any option.

Most waterways are under municipal jurisdiction. There is a total of seven miles of provincial waterway in the District. There are dams and reservoirs on the Pilot Creek at Pilot Mound and Crystal Creek at Crystal City which are under provincial jurisdiction.

II. CONCERNS/OBJECTIVES

Development or unsuitable agricultural practices on hazard lands can lead to acceleration of environmental damage, interference with natural processes, public expenditures for remedial works or assistance, waste of resources and personal loss and hardship. In order to mitigate against these concerns the following objectives are established.

OBJECTIVES:

1. To minimize personal hardship and inconvenience, adverse affects on public health and loss of life;
2. To minimize property damage and public expenditures for relief or protection in areas subject to flooding, water erosion, wind erosion, bank instability, landslide or subsidence;
3. To restrict activities which would accelerate or promote damages arising from causes such as erosion or bank instability;
4. To acquire access to all waterways in order to carry out public work projects when required;
5. To maintain the natural capacity of the streams to convey flood flows;
6. To encourage the preservation of natural vegetation along the banks of waterways.

III. POLICIES/GUIDELINES

1. Development in areas which, in the opinion of the Board or Council, may be subject to physical hazards shall generally be limited to agricultural or open space uses. Under special economic or social circumstances the Board or Council may permit more intensive development if the hazard is eliminated or protected against. Development in hazardous areas shall be subject to the following requirements:
 - (a) If the land is subject to flooding all permanent structures must be located on land which has been raised by fill to an elevation at least 0.6 metres above the 100 year flood level.
 - (b) Land which may be eroded away within a period of 50 years must be excluded from development unless it is demonstrated, to the satisfaction of the Board or Council, that the erosion process has been halted.
 - (c) Development shall not be permitted on lands subject to bank instability, landslides or subsidence.
 - (d) All structures and services shall be protected against damage and shall be functional under hazard conditions.
2. Notwithstanding (1) development will not be permitted if, as a result of the development:
 - (a) There is an added risk to life or safety, or
 - (b) Water flow, flow velocities or stages are adversely altered, obstructed or increased.
3. Activities such as dumping, excavating, clearing, cultivation, or excessive grazing which would accelerate or promote dangerous erosion or bank instability will be prohibited.
4. In areas where the specific hazard has not been defined, permanent structures shall be set back from all waterways a distance of at least 10 times the height of the bank above channel grade or 60 metres, whichever is greater, unless an engineering investigation shows that these limits may be reduced.

IV. IMPLEMENTATION

The policies shall be implemented by means of, variously, zoning by-laws, conditions of subdivision approval, the issuance of development permits and building permits, development agreements and such programs as are determined from time to time by the Board or Councils to be necessary and not in conflict with the provisions of any part of the Plan.

WILDLIFE RESOURCES

I. PRESENT CONDITIONS/INTRODUCTION

This Planning District falls entirely within the Manitou-Clearwater Prairie Area, a natural landscape area of south-central Manitoba. The terrain in the District is remarkably smooth, varying from almost level to very gently rolling. A few isolated hills or mounds of shale protrude as local features above the general area (i.e. Pilot Mound). Prior to settlement, the vegetation was mostly prairie, interspersed with thrifty stands of aspen, where soil moisture conditions were better. Some portions of the District have sandy or light-textured soils which are susceptible to wind and water erosion. Historically, the park-like aspect of the area was dominated by tall prairie grasses and associated prairie plants. In addition to the thrifty aspen groves, islands of oak were, and to some degree still are, found on the drier sites such as low mounds and the eroded slopes of ravines.

The District is bordered on the north by the valley of the Pembina River, a deep meandering valley containing Swan Lake at the extreme northern end of the district. There are many small tributary creeks and ravines which enter the southern slope of the valley which add to the variance in topography and to the overall value for wildlife of the area, since these ravines and valley slopes are generally forested heavily with aspen and oak and many understory shrubs and plants.

Of the approximately 10 townships within the Planning District, an estimated eight townships have been given an agricultural capability classification of Class 2. The poorest land from an agricultural viewpoint is the Pembina Valley, associated rough terrain near the valley edge, tributary ravines and some rougher topography north of Wood Bay. With much of the District having good agricultural potential, it follows that land use is intensive. The best land for wildlife, to some extent by default, are the many ravines and stream tributaries and the Pembina River Valley itself.

Wildlife Populations

Population surveys for this District of all species of wildlife are generally unavailable, but subjective comments on the relative abundance of groups of species or individual animals follows.

White-tailed Deer

Canada Land Inventory ungulate capability maps for this area rate most of the land in the District as quite poor for white-tailed deer (Class 6). This is largely due to the lack of relief and interspersed cover and habitat. This classification is probably a very real reflection of existing land use - very little habitat remains in the good agricultural portion of the District. Conversely, the ravines and tributaries of the Pembina River and the valley slopes are rated very highly (Class 1) and serve as key wintering areas for white-tails. The areas north of Wood Bay and northwest of Crystal City are rated Class 3 for deer, largely due to the terrain, remaining cover and greater land and habitat diversity. Wintering populations of deer depend on these slopes and rougher areas during winter months, since they constitute the largest blocks of habitat remaining in the District. In most winters, deer

from the farmland to the south migrate north to these treed areas for protection from the winter weather. The capacity of some of higher-rated lands for ungulates could be reduced by intensive cattle grazing, which lowers the likelihood of deer survival by intensifying competition for forage plant species.

Moose and Elk

Populations of these two large ungulates are exceptionally small in the District and perhaps transitory in nature. In recent years, more frequent reports of both species have been received from the area. These animals, if any exist today in the District, are likely to be associated with the treed areas along the Pembina River. Moose that wander into the area likely come up the Pembina River from North Dakota. Elk probably emigrate from the Spruce Woods area to the Tiger Hills and then to the valley. It is unlikely that either species will ever establish itself in significant numbers here.

Waterfowl and Wetlands

Most of the District has been rated poor or mediocre for waterfowl production. Swan Lake is considered as a staging area for migrating waterfowl. Waterfowl nesting habitat and wetlands are scarce in much of the District because of the terrain and high agricultural use.

There are a few large lakes or ponds in the northern part which probably play a minor role in waterfowl production, several of which might exceed 100 acres in size. There is probably some duck production along the Pembina River but the valley is not highly rated. Several attempts to enhance waterfowl production have been made on Wildlife Management Areas in the valley by joint Ducks Unlimited-Manitoba Natural Resources projects.

Furbearers

A variety of furbearers are found, dependent on habitat availability. Most of the larger ponds or wetlands have muskrats occupying peripheral marsh cover. Beaver occur in most of the ravines and in the river valley and wherever water supplies are sufficient for colony establishment. Mink are certainly found in association with marshes, streams and the river. Coyotes and red foxes are found in areas of rougher terrain and to a lesser extent in the open farmland. Both species generally appear to be on the increase in recent years. Other species such as red and gray squirrel, weasel and badger are associated with areas of treed terrain and pastures.

Upland Game Birds

Hungarian partridge are found generally in association with agricultural fields and small acreages of cover in the intensively farmed area. Sharptailed grouse are not common since habitat is generally fairly scarce. Ruffed grouse are limited to the treed areas of the valley and rougher terrain. The wild turkey, an introduced species, is found in the valley and associated uplands, generally in reasonable proximity to farmsteads.

Nongame Species

With the variance of terrain and topography, it is expected that a great many species of nongame birds and animals are present. Information on the relative abundance of any species is virtually unavailable. No rare or endangered species of animal or bird is known to be present in this area. The treed slopes of the Pembina Valley offer good nesting habitat for raptors, and it is expected that a reasonable number of these birds of prey nest in or near the valley.

Order-in-Council Wildlife Lands

There are five units of the Pembina Valley Wildlife Management Area within the District, all lying in or close to the Pembina Valley. Together, the Wood Bay, Floral, Grassy Lake, Marrinhurst and Stuartville Units total approximately 3400 acres. There are no wildlife refuges in the District.

Wildlife Projects

The Manitoba Wildlife Federation owns approximately 294 acres of land on 30-4-10W. Ducks Unlimited (Canada) has a total of 16 projects, some of which are on the W.M.A. units, the remainder occurring on private land. These projects are listed by name and legal description as follows:

<u>Name</u>	<u>Location</u>
Blackburn	05-04-11W
Deliechte	NW 22-03-12W
Signet	SE 06-04-11W
Floral	E1/2 13-04-12W
Balfours	S1/2 04-04-11W
Kathleens	20-03-11W
Grassy Lake	30-04-10W
Booker/Brown	E1/2 35-01-10W
Robertson	SE 20-01-10W
Norton	E1/2 35-01-11W
Harms	NW 25-01-11W
Neufeld	NW 08-01-11W
Creith	NW 13-02-10W
Hammond	NE 17-03-10W
Wood Bay	E1/2 17-04-10W
Tom	S1/2 16-04-11W

Recreational Aspects of Wildlife

The most notable, or at least quantifiable, use of wildlife is by sport hunters, particularly deer hunters. Local deer hunters have been quite vocal in past years on the issues of deer seasons, trespass problems, habitat loss, and related matters. Many of these concerns have been dealt with and resolved by the Department. Many rural and town residents of the District enjoy a variety of wildlife species in the District.

II. CONCERNS/OBJECTIVES

Wildlife problems in this area are generally minor, of only periodic concern to residents and the municipality. Waterfowl depredation on cereal crops is generally light and not considered a major problem by Natural Resource Officers. Big-game damage to cereal and forage crops, particularly during winter months, tends to be minor with only periodic complaints registered with the Department. Nuisance beaver problems are also minor, probably since they do not have sufficient habitat in which to establish colonies away from the tributary ravines of the valley. As a result, damage to roads, culverts and pastures tends to be minor in comparison to other municipalities. No other concerns about wildlife have been brought to the attention of Department staff by local residents.

The following objectives and policies regarding wildlife and wildlife habitat are suggested for consideration of the Planning District Board:

OBJECTIVES:

1. To maintain wildlife populations at existing levels, particularly on poorer quality land.
2. To promote programs and legislation to maintain wildlife habitat on private land, unused road allowances, and Crown land.
3. To promote communication and cooperation between local residents and the municipal council, government departments (particularly the Wildlife and Regional Services branches of Manitoba Natural Resources), the Manitoba Wildlife Federation, Ducks Unlimited (Canada), etc., so as to achieve an active program of conservation of habitat and wildlife resources within the District.
4. To promote all possible uses of wildlife within the District: trapping, hunting, wildlife viewing and wildlife appreciation.

III. POLICIES/GUIDELINES

1. The Board of the District should protect from clearing all shrub or tree cover on lands with an agricultural capability of Classes 4, 5 and 6.
2. The District Board should be encouraged to curtail road development and to embark on an active program of establishing "Conservation Corridors" on unused road allowances.
3. Landowners should be encouraged to retain natural marshes and ponds in their native condition, rather than attempting to drain them.
4. Areas prone to waterfowl or deer depredation should be identified and landowners encouraged to work cooperatively with N.R.O. staff of Manitoba Natural Resources in an attempt to reduce or minimize losses.

IV. IMPLEMENTATION

The objectives and policies of the District with respect to land use and wildlife resources should be implemented as follows:

1. By assistance and advice on conservation practices from Manitoba Agriculture and Manitoba Natural Resources.
2. By public and private cooperation through management and development agreements.
3. By the adoption of zoning bylaws or legislation passed by Councils or the Board.
4. Through the control of issuance of development permits where applicable.

CROWN LANDS

I. PRESENT CONDITIONS/INTRODUCTION

This section describes the Crown lands in the Planning District, providing an inventory of Crown lands and present commitments. Additionally, this section will discuss the authority for Crown lands, the legal aspects thereof and the planning and administration of Crown land.

DEFINITION

Crown land, for the purposes of this section, is defined as all land under Order-in-Council designated as: Provincial Park, Provincial Forest, Ecological Reserve, Wildlife Management Area, and Community Pasture, plus all other land administered by Manitoba Natural Resources and Manitoba Agriculture under 'The Crown Lands Act'. In addition, all waterbodies, streams, rivers, and creeks are considered Crown lands except where original title has confirmed the lake bed or stream bed to an individual.

ACTS AFFECTING CROWN LANDS

There are a variety of acts which affect the administration and management of Crown lands. For the purposes here, the principal acts which govern use and management of these lands are:

1. The Crown Lands Act,
2. The Fisheries Act,
3. The Forest Act,
4. The Provincial Park Lands Act,
5. The Water Power Act,
6. The Rivers and Streams Act,
7. The Wildlife Act, and
8. The Water Resources Administration Act.

MANAGEMENT AND ADMINISTRATION OF CROWN LAND

The actual management and administration of Crown land is shared between two Departments of Government, Manitoba Natural Resources and Manitoba Agriculture. Agricultural Crown Lands has been assigned the functions and related administration pertaining to the issuance of agricultural leases and permits of occupation or use of those Crown lands which are designated as:

1. primarily agricultural lands, and
2. multiple use lands which may only be used for agricultural purposes on an interim or secondary use basis, subject to specific conditions and covenants required by other resource users.

The principle responsibility for Crown land remains with Manitoba Natural Resources, which administers The Crown Lands Act excepting those specific sections under the responsibility of the Minister of Agriculture.

The Minister of Natural Resources is responsible for administration, direction and control of the surveys of Crown lands. Survey monuments defining

Township, Section and Quarter Section corners have been established throughout the Planning District.

The protection of the township survey fabric, the primary function of which is to support the transferring of rights in land via The Real Property Act or The Crown Lands Act, is essential to efficient and effective land administration. No system, purporting to give evidence of the ownership of land is complete if one cannot determine what land is being conveyed or where its boundaries are located. Boundaries, once defined, are a matter of law and the survey monument is the vital link between the ground and the administrative record.

CROWN LAND CLASSIFICATION AND PLANNING

Crown land is exempt from The Planning Act and is under the jurisdiction of the Manitoba Government as governed by the various acts of the Legislature mentioned above.

The classifying to use of Crown land in the southern portion of the Province is the responsibility of the Crown Land Classification Committee, (CLCC). This is an Interdepartmental Committee with representation from Manitoba Agriculture, Natural Resources, Northern Affairs and Municipal Affairs. The CLCC reports to and receives their direction from the Provincial Land Use Committee of Cabinet.

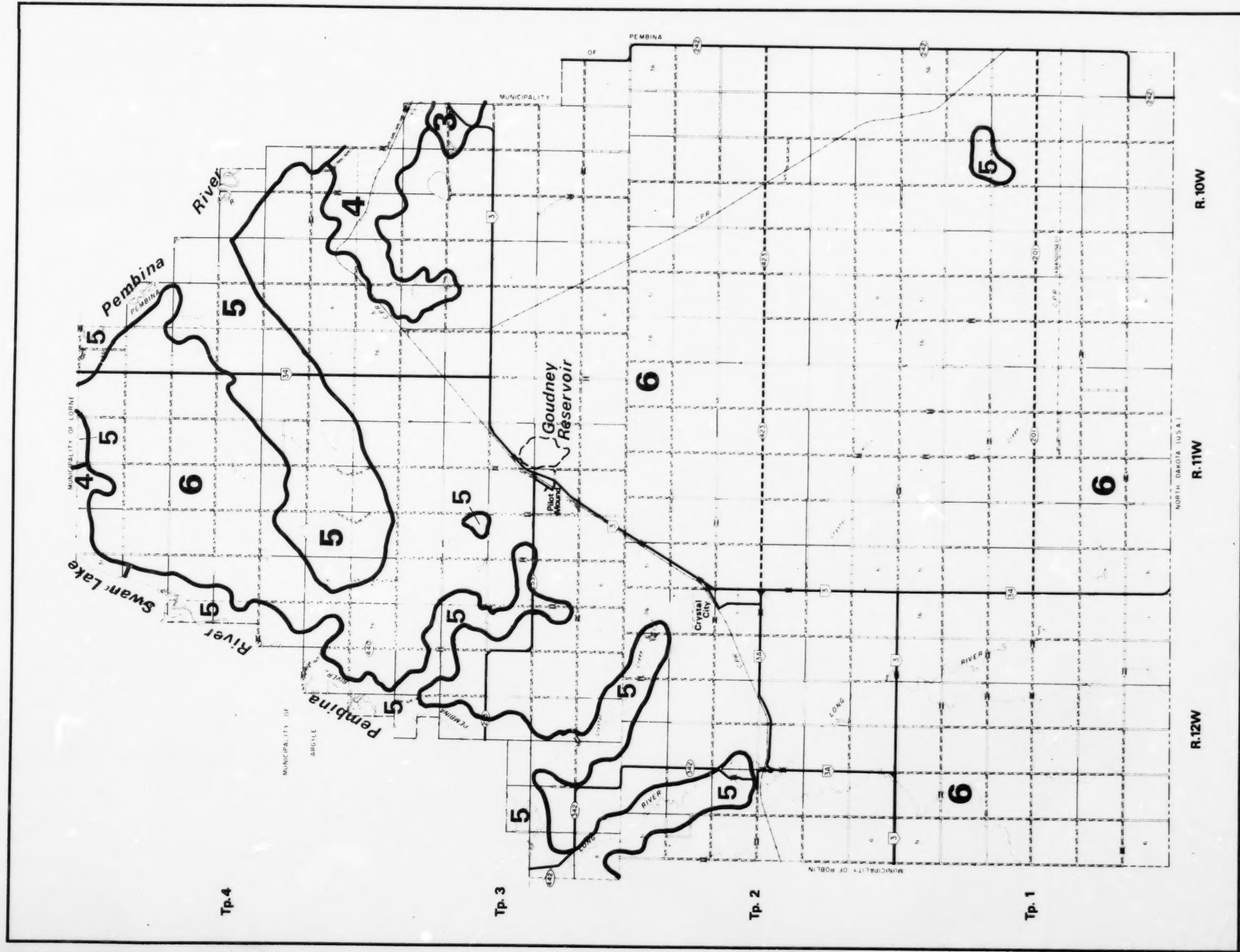
In carrying out this responsibility, the CLCC has established Bloc Planning Committees (BPCs). These BPCs have regional representatives from Manitoba Agriculture, Natural Resources, Northern Affairs and Municipal Affairs. The BPCs provide field recommendations, in effect, providing to the CLCC preliminary land use plans for their consideration of Crown lands. They are not, however, final plans. The Crown Land Classification Committee requires that all such plans must be reviewed and commented on by Local Councils and/or Planning District Boards. It is only after such review and appropriate adjustment if necessary, that a final Crown land plan is prepared.

INVENTORY

In the Louise Planning District there are approximately 910 hectares of Crown land, constituting approximately 0.9 percent of the land base of the District (Map 6).

PRESENT COMMITMENTS

In the Louise Planning District, most of the Crown lands (586 hectares) are committed to wildlife purposes by Order-in-Council inclusion in Wildlife Management Areas. A large part of these lands are also under Miscellaneous Lease to Ducks Unlimited for waterfowl habitat enhancement work. Of the Crown lands not committed by Order-in-Council, an additional 259 hectares are under Miscellaneous Lease to Ducks Unlimited, 64 hectares are in Wildlife reservation, 0.5 hectare is in Water Control Work. One parcel (65 hectares) is also committed via a Forage Lease to agricultural purposes.



Map 1
Fisheries Habitat & Recreation Capability*

**LOUISE
PLANNING
DISTRICT**

Tp. 1



NORTH DAKOTA (U.S.A.)

R.12W

R.11W

R.10W

LOUISE PLANNING DISTRICT

Map 1 Fisheries Habitat & Recreation Capability*

5

Recreation Capability

Fisheries Habitat - Pembina River
- Swan Lake
- Goudney Reservoir

*Canada Land Inventory



Tp. 4

Tp. 3

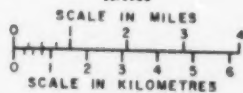
Tp. 2

Tp. 1

R. 12W

R. 11W

R. 10W



DRAWN:
M. M.

CHECKED:

PREPARED:
M. Rutulis

SUBMITTED

LEGEND:



FRACTURED SHALE AQUIFERS: The aquifers are formed by fractured zones in the shale bedrock that underlies the whole area. The depth to the aquifers ranges from a few metres (10-15 feet) to more than 60 metres (200 feet). Well yield ranges from 0.2 L/s (2.7 I.G.P.M.) to 3 L/s (40 I.G.P.M.) but generally is less than 1.0 L/s (13 I.G.P.M.). Water quality in the shale aquifers ranges from good to saline. The water quality varies considerably from place to place within short distances and with depth. Poor quality water with high sulphate and salt concentrations and high hardness is fairly common. The saline or slightly saline waters, which are common in deeper aquifers, generally have low hardness and therefore are more acceptable than the high sulphate and hardness waters in the shallower aquifers.



SAND AND GRAVEL AQUIFERS: The aquifers are formed by lenses of sand and gravel in the surficial deposits. The area of the aquifers may range from less than a hectare (acre) to hundreds of hectares (acres). Sand and gravel aquifers are fairly common in the buried bedrock valleys that exist in the district. Well yield generally is less than 1.0 L/s (13 I.G.P.M.). Water quality ranges from good to slightly saline. High sulphate concentration and high hardness are fairly common.



BURIED BEDROCK VALLEY: The boundaries of the valleys are approximate in general and probable where indicated with question marks. The depth of bedrock valleys is more than 70 metres (230 feet) below ground level in the southern part of the district.

MAP 2

DRAWN: M. M. CHECKED: PREPARED: M. Rutlis	Manitoba Natural Resources Water Resources 	LOUISE PLANNING DISTRICT			
		AQUIFERS			
SUBMITTED: <i>L. Gray</i>		APPROVED: <i>[Signature]</i>		SCALE: AS SHOWN	DATE: 86 11 21
		SHEET: 2 OF 3		FILE NO. 10-1-7-1232	

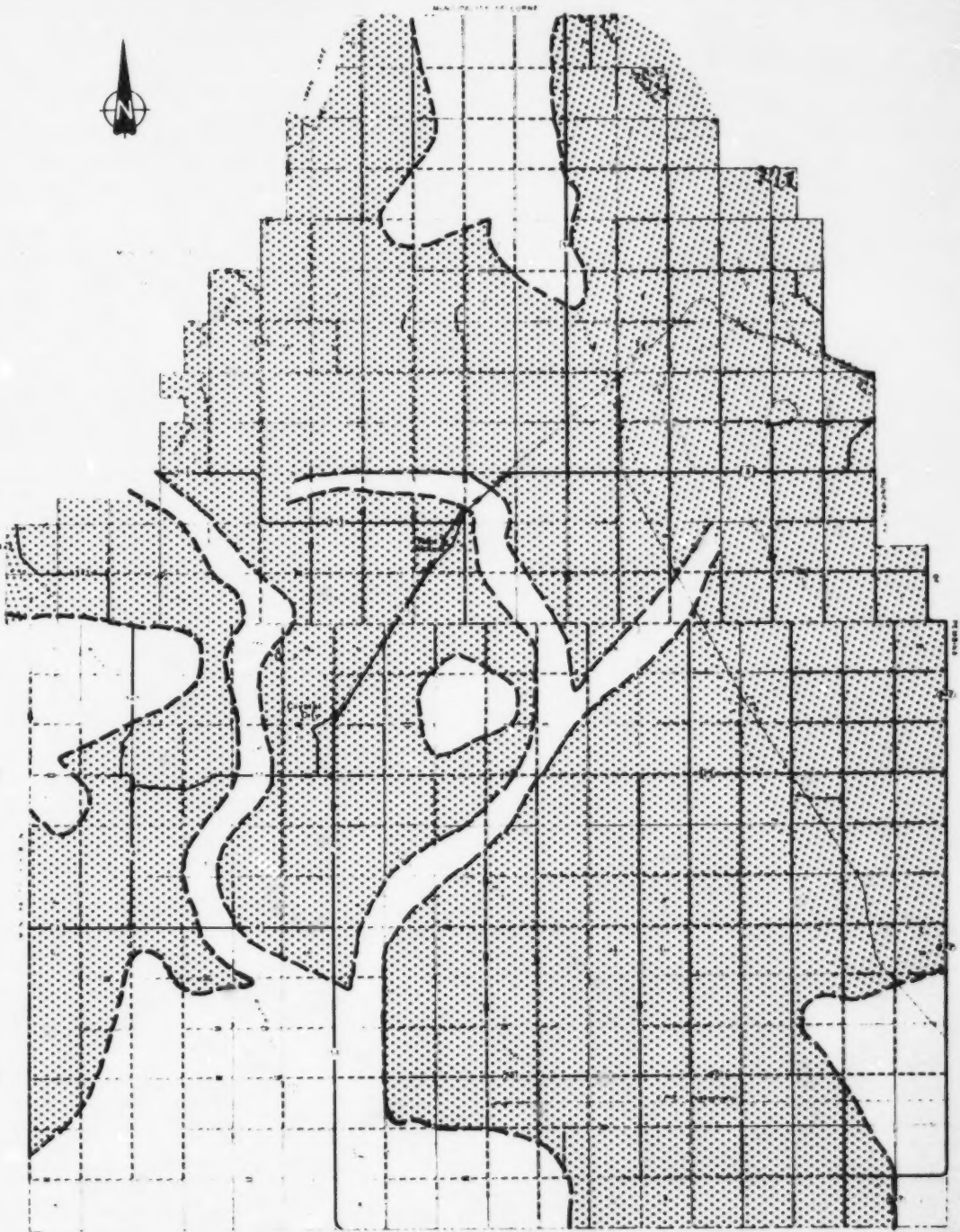


Tp. 4

Tp. 3

Tp. 2

Tp. 1



R. 12W

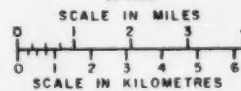
R. 11W

R. 10W

LEGEND:



GROUNDWATER POLLUTION
HAZARD AREA



NOTE: Detailed field investigations may show that groundwater pollution hazard does not exist in some of the areas or parts thereof shown on the map.

MAP 3

DRAWN
M. M.
CHECKED
PREPARED
M. Rutulis

Manitoba
Natural Resources
Water Resources



SUBMITTED

APPROVED

LOUISE PLANNING DISTRICT

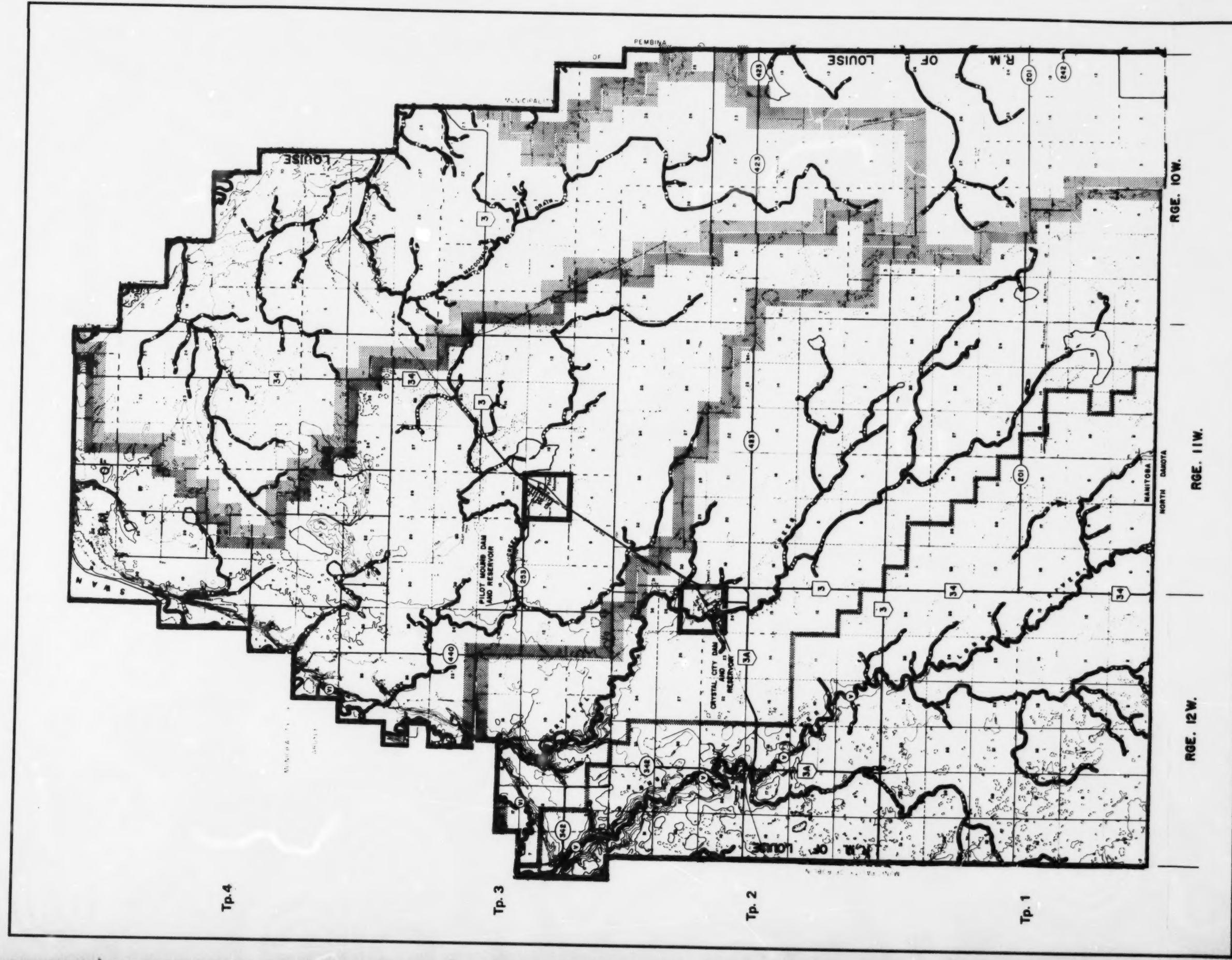
**GROUNDWATER POLLUTION
HAZARD AREAS**

SCALE
AS SHOWN

DATE
86 11 21

SHEET
3 of 3

FILE NO.
10-1-7-1232



Map 4. Surface Drainage Systems

**LOUISE
PLANNING
DISTRICT**

LEGEND

WATER COURSE

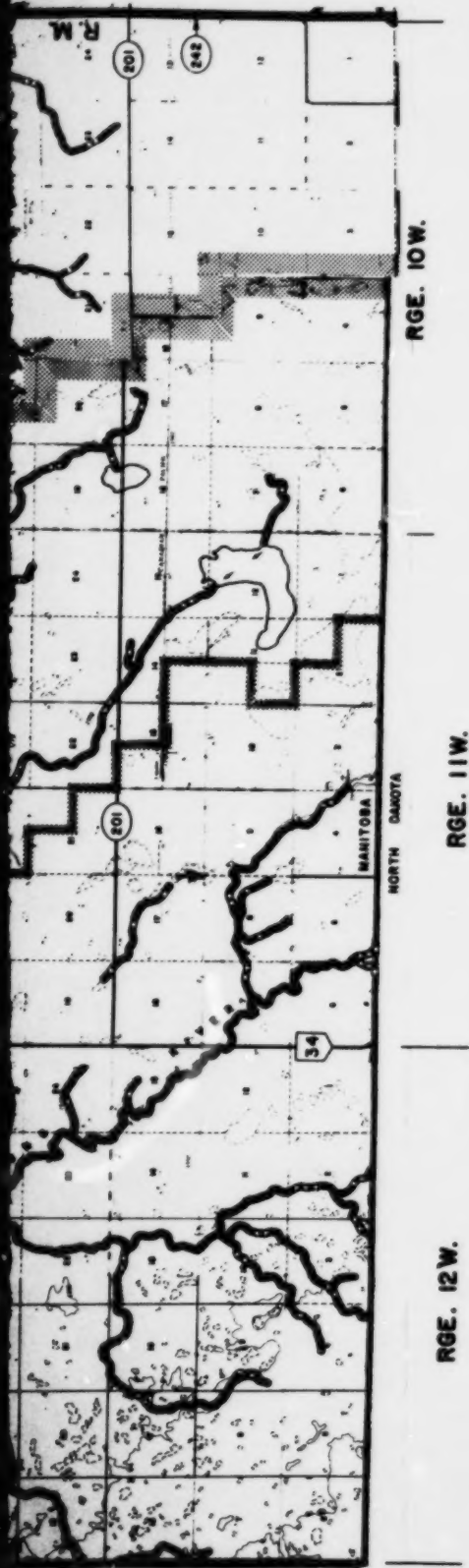
(c) ORDER DRAINING

2nd ORDER DRAINS

346 CROON DRAINS

400 ORDER ORAINS

Tp. 1



**Map 4.
Surface Drainage
Systems**

**LOUISE
PLANNING
DISTRICT**

LEGEND

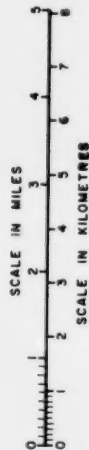
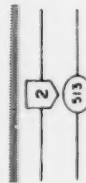
WATER COURSE

- 1st ORDER DRAINS
- 2nd ORDER DRAINS
- 3rd ORDER DRAINS
- 4th ORDER DRAINS
- 5th ORDER DRAINS
- 6th ORDER DRAINS
- 7th ORDER DRAINS



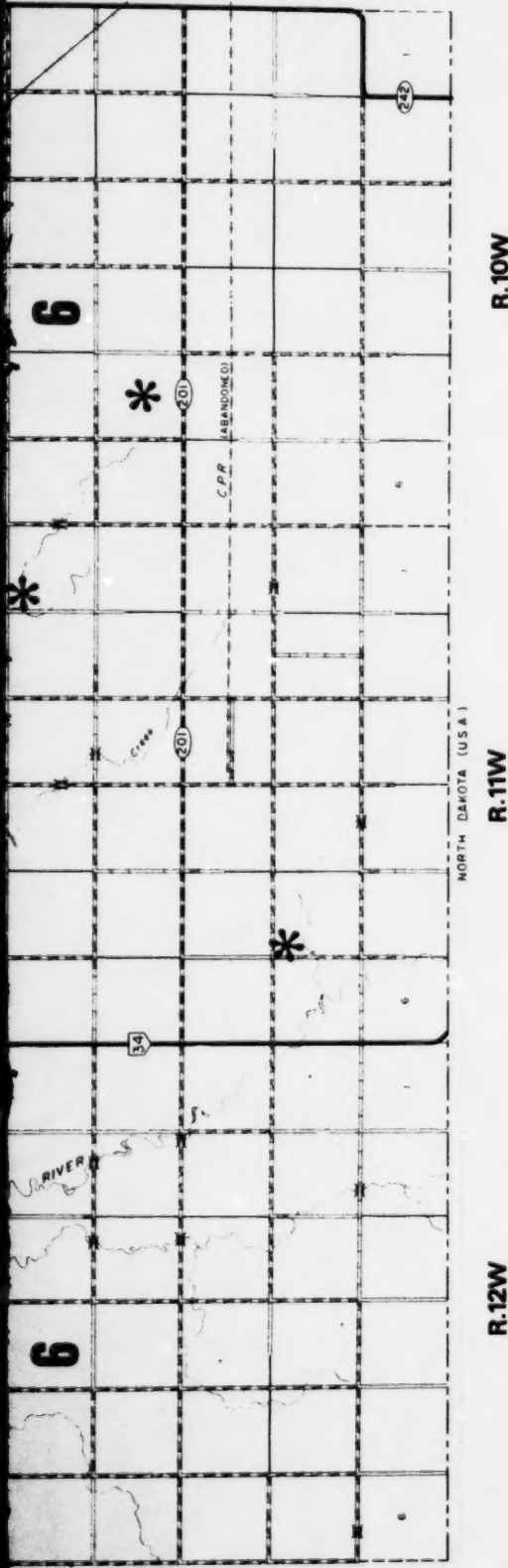
LIMITS OF DRAINAGE AREA

- CITY, TOWN AND MUNICIPAL BOUNDARIES
- PROVINCIAL TRUNK HIGHWAYS
- PROVINCIAL ROADS





Tp. 1



R.12W

R.11W

R.10W

LOUISE PLANNING DISTRICT

Map 5 C.L.I.* Ungulate Capability, Wildlife Management Areas & Ducks Unlimited Projects.



C.L.I. Ungulate Capability



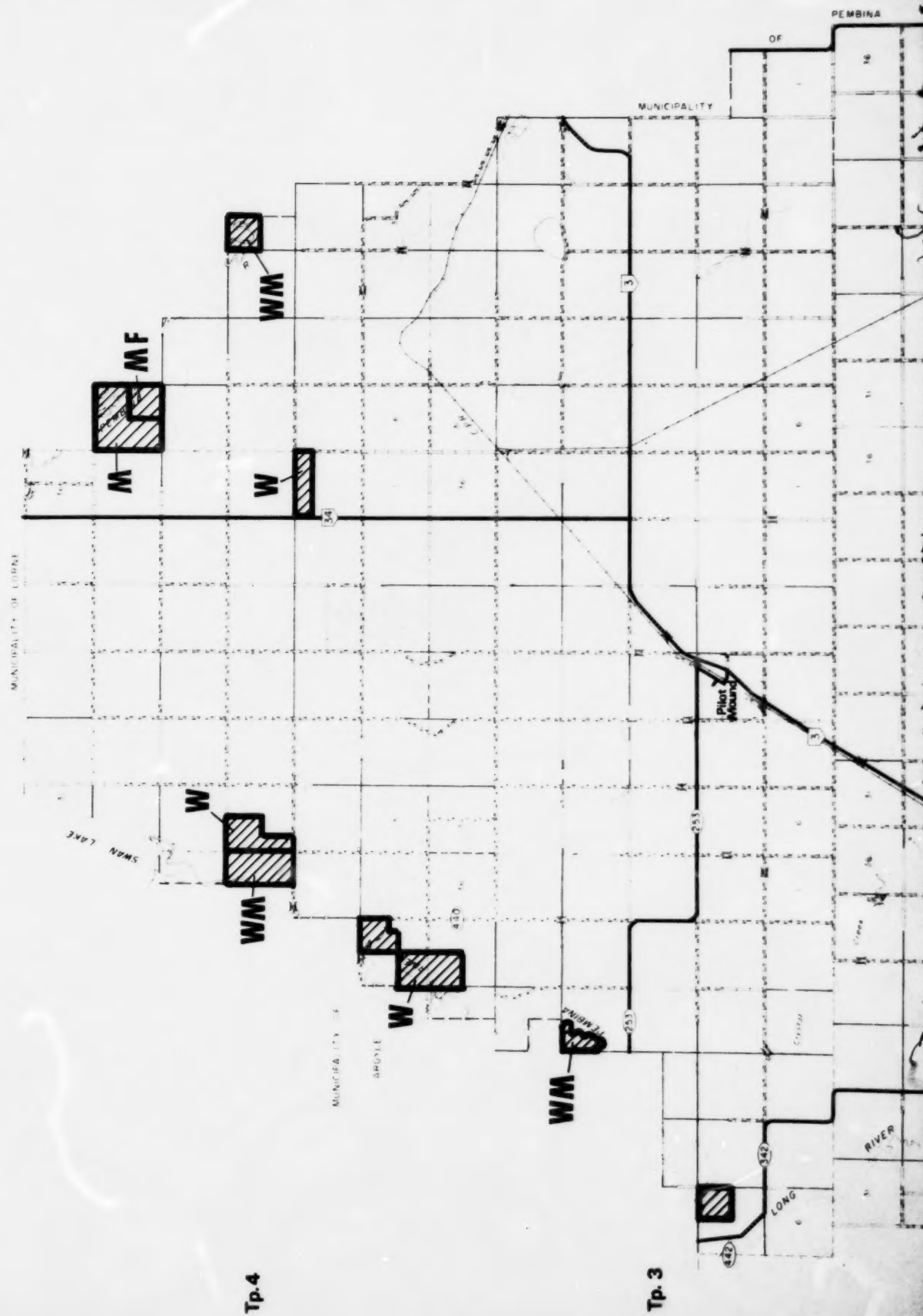
Wildlife Management Area



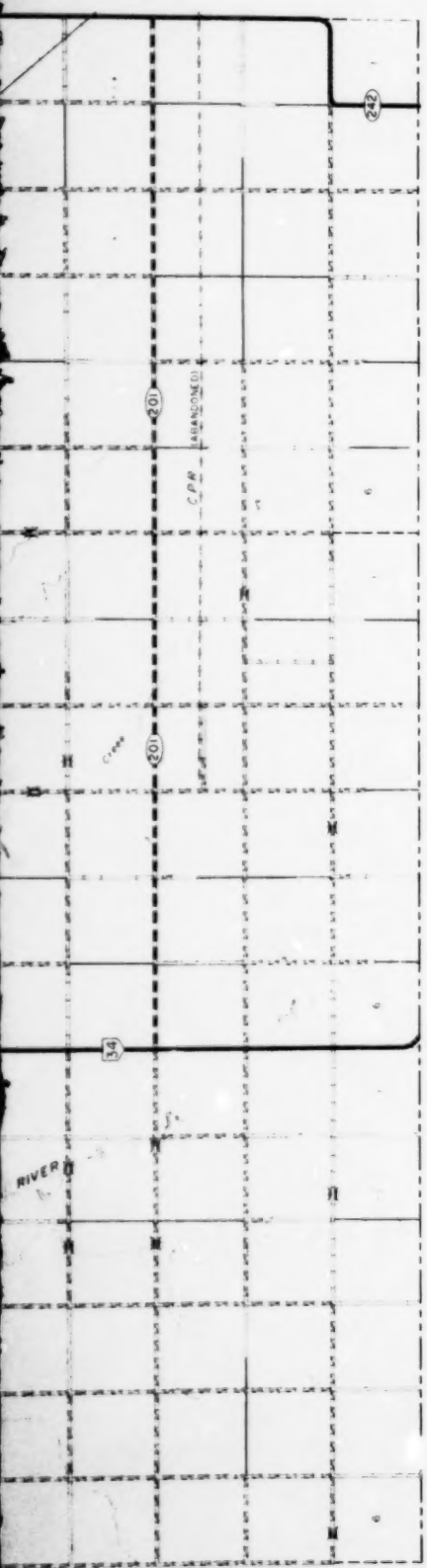
Ducks Unlimited Project

* Canada Land Inventory





Tp. 1



R. 12W

R. 11W

R. 10W

NORTH DAKOTA (U.S.A.)

LOUISE PLANNING DISTRICT

Map 6
Provincial Crown Lands (Dec. 1986).



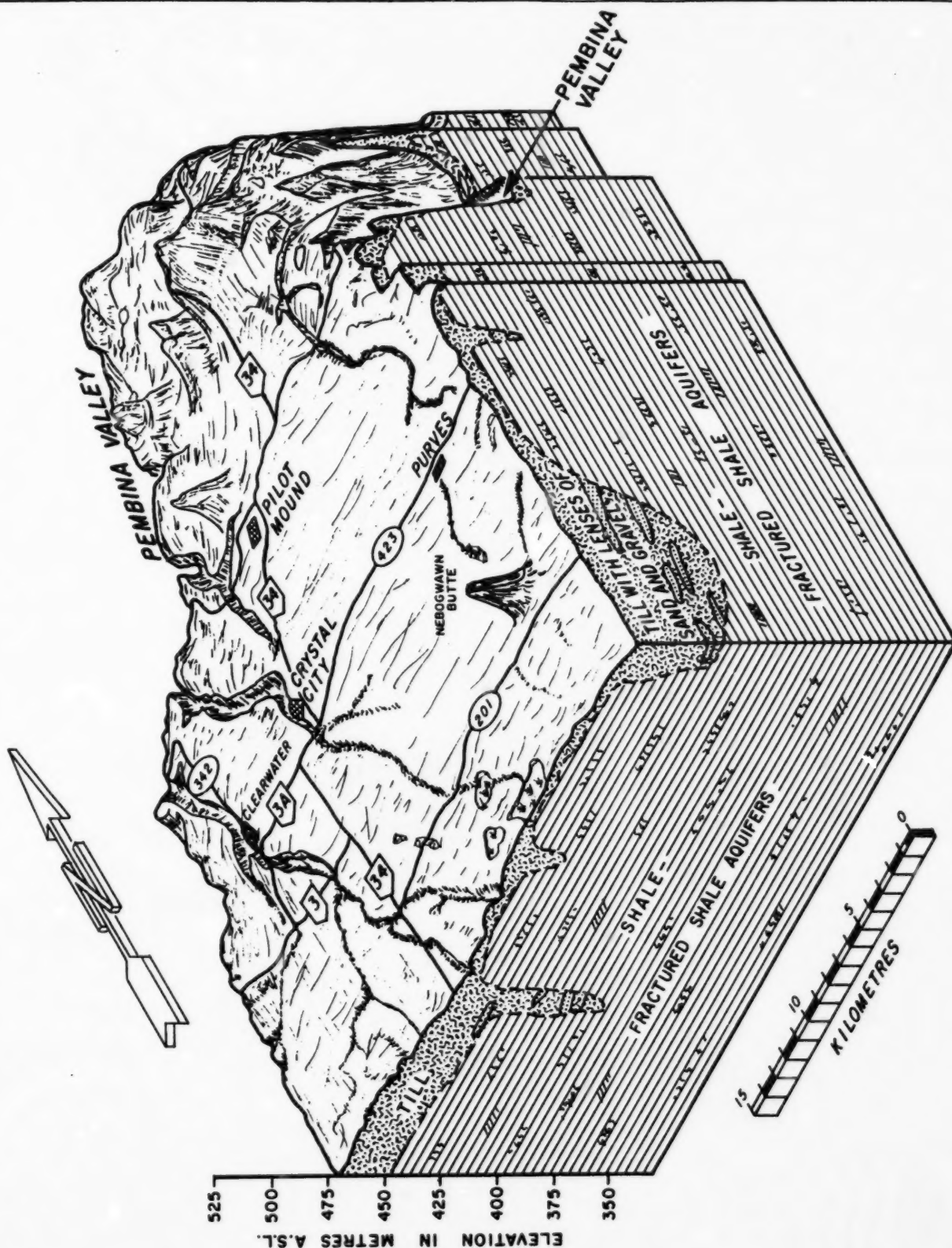
Crown Lands

W Wildlife Management Area

M Miscellaneous Lease

F Forage Lease

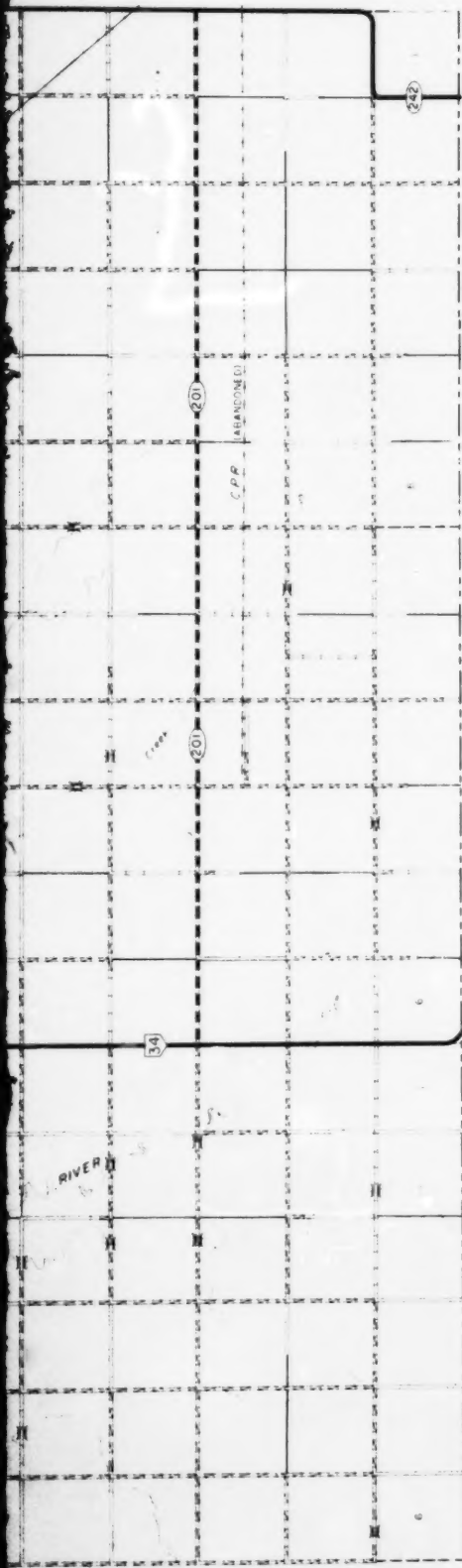




DRAWN F.B.R.	Manitoba Natural Resources Water Resources 	LOUISE PLANNING DISTRICT			
CHECKED		TOPOGRAPHIC AND SUBSURFACE FEATURES			
PREPARED M. Rutulis		SUBMITTED <i>E. Gray</i>	APPROVED <i>[Signature]</i>	SCALE AS SHOWN	DATE 86 11 21
			FILE NO.		

FIGURE 1

Tp. 1



R.12W

R.11W

R.10W

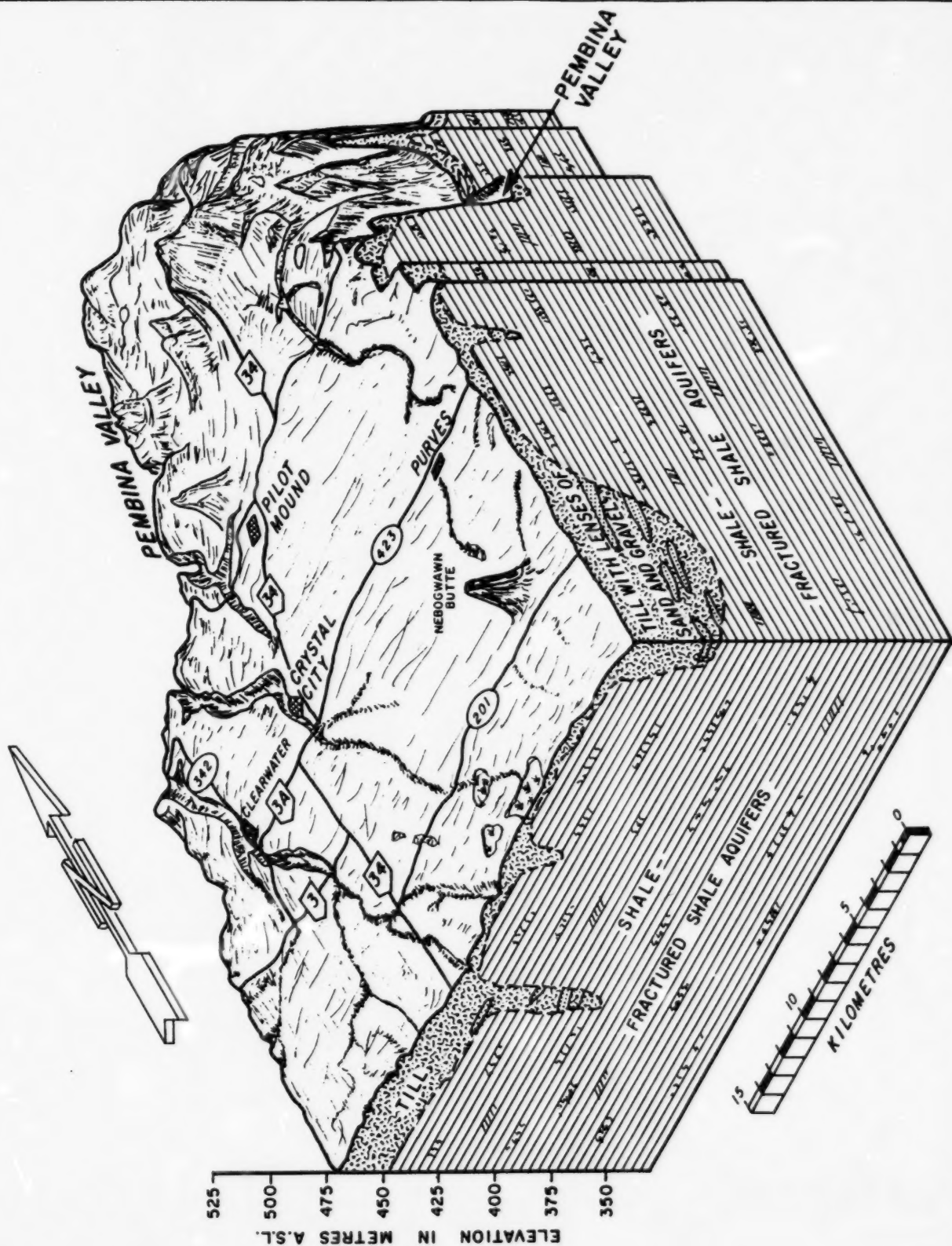
NORTH DAKOTA (U.S.A.)

Map 6
Provincial Crown Lands (Dec. 1986).

LOUISE PLANNING DISTRICT

-  Crown Lands
- W** Wildlife Management Area
- M** Miscellaneous Lease
- F** Forage Lease





DRAWN F.B.R.		Manito Natural Resources		LOUISE PLANNING DISTRICT			
CHECKED		Water Resources		TOPOGRAPHIC AND SUBSURFACE FEATURES			
PREPARED M. Rutulis		SUBMITTED <i>[Signature]</i>		APPROVED <i>[Signature]</i>		SCALE AS SHOWN	DATE 06 11 21
				SHEET 1 of 3	FILE NO.		

FIGURE 1